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Fire Research Publications, 1983

U.S. DEPARTMENT OF COMMERCE
National Bureau of Standards
National Engineering Laboratory
Center for Fire Research
Washington, DC 20234

April 1984



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Nora H. Jason

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1976	NBSIR 77-1277	PB-269965
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- Babrauskas, V. Estimating large pool fire burning rates. *Fire Technology*; November 1983; 19(4): 251-261.
- Babrauskas, V. Upholstered furniture heat release rates: Measurements and estimation. *Journal of Fire Sciences*; January/February 1983; 1: 9-32.
- Baum, H. R., Rehm, R. G., Barnett, P. D. and Corley, D. M. Finite difference calculations of buoyant convection in an enclosure. Part 1. The basic algorithm. *SIAM Journal on Scientific and Statistical Computing*; March 1983; 4(1): 117-135.
- Baum, H. R., Rehm, R. G. and Mulholland, G. W. Prediction of heat and smoke movement in enclosure fires. *Fire Safety Journal*; 1983; 6(3): 193-201.
- Bell, J. R. Five die in Rockefeller Park Towers fire, Cleveland, Ohio. *Fire Journal*; March 1983; 77(2): 63-65.
- Bell, J. R. Five die in Pittsburgh boarding home fire. *Fire Journal*; September 1983; 77(5): 68-71,75.
- Bell, J. R. and Klem, T. J. Twelve die in fire at Westchase Hilton Hotel Houston, Texas. *Fire Journal*; January 1983; 77(1): 11-15,20-23,54-56.
- Bell, J. R. and Klem, T. M. Westchase Hilton investigation. *Fire Services Today*; January 1983; 1: 12-17.
- Benjamin, I. A. Detector response in large buildings. In: Society for Fire Protection Engineers and the National Bureau of Standards, Nelson, H. E., Ed. *Engineering applications of fire technology workshop. Proceedings*; April 16-18, 1980; Gaithersburg, MD. Boston, MA: Society for Fire Protection Engineers; 1983.
- Best, R. \$100 million fire in K-Mart Distribution Center-- Sprinkler systems overwhelmed. *Fire Journal*; March 1983; 77(2): 36-42,80.
- Birk, M., Malek, D. and Paabo, M. Study of biological samples obtained from victims of MGM Grand Hotel fire. *Journal of Analytical Toxicology*; November/December 1983; 7: 265-271.
- Borges, R. A. and T'ien, J. S. Modelling the fuel temperature effect on flame spread limits in opposed flow. *Combustion Science and Technology*; 1983; 32(1-4): 125-136.
- Brauman, S. K., Chen, I. J. and Matzinger, D. P. Polystyrene degradation during combustion. *Journal of Polymer Science: Polymer Chemistry Edition*; 1983; 21: 1831-1845.

Braun, E., Krasny, J. F., Peacock, R. D., Paabo, M., Smith, G. F. and Stolte, A. Cigarette ignition of upholstered chairs. Journal of Consumer Product Flammability; December 1982; 9(4): 167-183.

Calcote, H. F. Ionic mechanisms of soot formation. In: Lahaye, J. and Prado, G., Eds. Soot in Combustion Systems and Its Toxic Products. New York: Plenum Publishing Corporation; 1983: 197-215.

Carrier, G., Fendell, F. and Fink, S. Towards wind-aided flame spread along a horizontal charring slab: The steady-flow problem. Combustion Science and Technology; 1983; 32(1-4): 161-209.

Chen, C. H. and T'ien, J. S. Fire plume along vertical surfaces: Effect of finite-rate chemical reactions. In: American Society of Mechanical Engineers, Heat Transfer Division, Quintiere, J. G., Alpert, R. L. and Altenkirch, R. A., Eds. 21st National Heat Transfer Conference, Fire Dynamics and Heat Transfer; July 24-28, 1983; Seattle, WA; 1983.

Cooper, L. Y. Buoyant source in the lower of two, homogeneous, stably stratified layers--a problem of fire in an enclosure. American Society of Mechanical Engineers. Symposium on modeling of environmental flow systems. Annual meeting; November 13-18, 1983; Boston, MA.

Cooper, L. Y. Calculating escape time from fires. In: Society of Fire Protection Engineers and the National Bureau of Standards, Nelson, H. E., Ed. Engineering applications of fire technology workshop. Proceedings.; April 16-18, 1980; Gaithersburg, MD. Boston, MA: Society of Fire Protection Engineers; 1983.

Cooper, L. Y. Concept for estimating available safe egress time in fires. Fire Safety Journal; 1983; 5(2): 135-144.

Cooper, L. Y. Convective heat transfer to ceilings above enclosure fires. In: Symposium (International) on Combustion. 19th ed. Pittsburgh, PA: Combustion Institute; 1982: 933-939.

Cooper, L. Y. Design of effective water spray cooling in stairwell-sprinkler systems. In: Society for Fire Protection Engineers, Nelson, H. E., Ed. Engineering applications of fire technology workshop. Proceedings.; April 16-18, 1980; Gaithersburg, MD. Boston, MA: Society for Fire Protection Engineers; 1983.

Cooper, L. Y. Development of hazardous conditions in enclosures with growing fire. Combustion Science and Technology; 1983; 33: 279-297.

Cooper, L. Y. On the significance of a wall effect in enclosures with growing fires. In: American Society of Mechanical Engineers, Heat Transfer Division, Quintiere, J. G., Alpert, R. L. and Altenkirch, R. A., Eds. 21st National Heat Transfer Conference, Fire Dynamics and Heat Transfer; July 24-28, 1983; Seattle, WA; 1983.

Evans, D. D. Plume flow in a two-layer environment. In: American Society of Mechanical Engineers, Heat Transfer Division, Quintiere, J. G., Alpert, R. L. and Altenkirch, R. A., Eds. 21st National Heat Transfer Conference, Fire Dynamics and Heat Transfer; July 24-28, 1983; Seattle, WA; 1983.

Fernandez-Pello, A. C. and Hirano, T. Controlling mechanisms of flame spread. Fire Science and Technology; May 1982; 2(1): 17-54.

Fisher, F. L., Mowrer, F. W. and Williamson, R. B. Room fire screening test procedure. Fire Technology; November 1983; 19(4): 238-250.

Gross, D. Aspects of stochastic modeling for structural fire safety. Fire Technology; May 1983; 19(2): 103-114.

Hasemi, Y. and Tokunaga, T. Modeling of turbulent diffusion flames and fire plumes for the analysis of fire growth. In: American Society of Mechanical Engineers, Heat Transfer Division, Quintiere, J. G., Alpert, R. L. and Altenkirch, R. A., Eds. 21st National Heat Transfer Conference, Fire Dynamics and Heat Transfer; July 24-28, 1983; Seattle, WA; 1983.

Huggett, C. Rate of heat release--implications for engineering decisions. In: Society for Fire Protection Engineers and the National Bureau of Standards, Nelson, H. E., Ed. Engineering applications for fire technology workshop. Proceedings; April 16-18, 1980; Gaithersburg, MD. Boston, MA: Society for Fire Protection Engineers; 1983.

Jeanes, D. C. Methods of calculating fire resistance of steel structures. In: Society for Fire Protection Engineers and the National Bureau of Standards. Engineering applications of fire technology workshop. Proceedings; April 16-18, 1980; Gaithersburg, MD. Boston, MA: Society for Fire Protection Engineers; 1983.

Jeng, S-M., Chen, L-D. and Faeth, G. M. Structure of buoyant methane and propane diffusion flames. In: Symposium (International) on Combustion. 19th ed. Pittsburgh, PA: Combustion Institute; 1982: 349-358.

Jones, W. W. Improved numerical method for fire models. Eastern States Section, Combustion Institute; December 12-14, 1983; Atlantic City, NJ.

Klote, J. H. Designing effective zoned smoke control systems. Building Design & Construction; November 1983; 24(11): 90-92.

Klote, J. H. Smoke control by stairwell pressurization. In: Society for Fire Protection Engineers and the National Bureau of Standards, Nelson, H. E., Ed. Engineering applications of fire technology workshop. Proceedings; April 16-18, 1980; Gaithersburg, MD. Boston, MA: Society for Fire Protection Engineers; 1983.

Loftus, J. J. and Peacock, R. D. Evaluation of wall protection systems for wood-burning appliances. *Fire Journal*; September 1983; 77(5): 23-25,28,39.

Mallard, W. G., Miller, J. H. and Smyth, K. C. ns Rydberg series of 1,3-trans-butadiene observed using multiphoton ionization. *Journal of Chemical Physics*; December 1983; 79(12): 5900-5905.

McCaffrey, B. J. Momentum implications for buoyant diffusion flames. *Combustion and Flame*; September 1983; 52(2): 149-167.

Miller, J. H., Mallard, W. G. and Smyth, K. C. Condensation of PAH during the soot formation process. In: Cooke, M. W. and Dennis, A. J., Eds. Polynuclear Aromatic Hydrocarbons. 7th International Symposium on Formation, Metabolism and Measurement. Columbus, Ohio: Battelle Press; 1982: 921-927.

Miller, J. H., Mallard, W. G. and Smyth, K. C. Optical studies of polycyclic aromatic hydrocarbons in pyrolysis and diffusion flame environments. In: Cooke, M. W. and Dennis, A. J., Eds. Polynuclear Aromatic Hydrocarbons. 7th International Symposium on Formation, Metabolism and Measurement. Columbus, Ohio: Battelle Press; 1982: 905-919.

Nelson, H. E. Credible engineering methodologies (as a solution to bridging the fire safety technology gap). Conference on communications between the fire research community and the owner-operators of buildings. Session on "Possible ways of bridging the communications gap"; November 10, 1983; Washington, DC.

Nelson, H. E. How close are we to scientifically based fire protection engineering?. IFPEL - IV International Fire Protection Engineering Institute; February 26-March 10, 1983; Brunnen, Switzerland.

Ohlemiller, T. Smoldering combustion propagation through a permeable horizontal fuel layer. In: Western States Section, Combustion Institute; April 11-12, 1983; Pasadena, CA.

Ohlemiller, T. J. and Lucca, D. A. Experimental comparison of forward and reverse smolder propagation in permeable fuel beds. *Combustion and Flame*; 1983; 54: 131-147.

Quintiere, J. and Tanaka, T. Some analysis of the FAA post crash aircraft fire scenario. *Fire Technology*; May 1983; 19: 77-89.

Quintiere, J. G., Birky, M., Macdonald, F. and Smith, G. Analysis of smoldering fires in closed compartments and their hazard due to carbon monoxide. *Fire and Materials*; September/December 1982; 6(3-4): 99-110.

Quintiere, J. G., Alpert, R. L. and Altenkirch, R. A., Eds. *Fire dynamics and heat transfer*. 21st National Heat Transfer Conference, Seattle, WA, July 24-28, 1983. Proceedings: American Society for Mechanical Engineers. Heat Transfer Division; 1983; HTD-Vol. 25.

Quintiere, J. G. Smoke measurements: An assessment of correlations between laboratory and full-scale experiments. *Fire and Materials*; September/December 1982; 6(3-4): 145-160.

Quintiere, J., Harkleroad, M. and Walton, D. Measurement of material flame spread properties. *Combustion Science and Technology*; 1983; 32(1-4): 67-89.

Robertson, A. F. Fire effluent toxicity--ISO involvement, approach and problems. Co-operating to fight fire. Third Symposium on Combustibility and Plastics; October 24-25, 1983; Toronto, Ontario: Society of the Plastics Industry of Canada; 1983: 42-50.

Robertson, A. F. Fire test methods: Classification and application. In: Schaffer, E. L., Ed. *Behavior of polymeric materials in fire*. STP 816 ed. Philadelphia, PA: American Society for Testing and Materials; 1983: 3-12.

Sibulkin, M., Kulkarni, A. K. and Malary, S. F. Nonsimilar calculations for free convection diffusion flames. *Combustion and Flame*; February 1983; 50(1): 59-64.

Smyth, K. C. Multiphoton techniques expand combustion diagnostic potential. *Nature*; February 1983; 301(10): 467-468.

Snell, J. E. Hazard assessment--challenge to fire science. *Journal of Fire Sciences*; January/February 1983; 1: 4-8.

Snell, J. E. Smoke toxicity--a view from the Center for Fire Research. *International Fire Chief*; July 1983; 49(7): 22-23.

Steckler, K. D. Calculations of wall fire spread in an enclosure. In: CSNI Specialist Meeting on Interaction of Fire and Explosion with Ventilation Systems in Nuclear Facilities; April 25-28, 1983; Los Alamos, NM.

Tamanini, F. Direct measurements of the longitudinal variation of burning rate and product yield in turbulent diffusion flames. *Combustion and Flame*; June 1983; 51(2): 231-243.

Wichman, I. S. Flame spread in an opposed flow with a linear velocity gradient. *Combustion and Flame*; April 1983; 50(2): 287-304.

Wichman, I. S. and Williams, F. A. Simplified model of flame spread in an opposed flow along a flat surface of a semi-infinite solid. *Combustion Science and Technology*; 1983; 32(1-4): 91-123.

Wong, K. L., Stock, M. F. and Alarie, Y. C. Evaluation of the pulmonary toxicity of plasticized polyvinyl chloride thermal decomposition products in guinea pigs by repeated CO₂ challenges. *Toxicology and Applied Pharmacology*; 1983; 70: 236-248.

Zook, B. C., Malek, D. E. and Kenney, R. A. Pathologic findings of rats following inhalation of combustion products of polytetrafluoroethylene (PTFE). *Toxicology*; 1983; 26: 25-36.

II. National Bureau of Standards Interagency Reports
and Handbooks

- Baum, H. and Rockett, J. A. NBSIR 83-2665.
Investigation of the forced ventilation in containership holds; May 1983 175 pages. In: NTIS.
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- Chamberlain, D. L. NBSIR 83-2597.
Heat release rate properties of wood-based materials; July 1983 90 pages. In: NTIS.
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Programmer's manual for the fire safety evaluation system cost minimizer computer program; July 1983 98 pages. In: NTIS.
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User's manual for the fire safety evaluation system cost minimizer computer program; December 1983 132 pages. In: NTIS.
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- Cherry, S. M., Ed. NBSIR 83-2800.
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Buoyant source in the lower of two, homogeneous, stably stratified layer--a problem of fire in an enclosure; December 1983 21 pages. In: NTIS.
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- Cooper, L. Y. NBSIR 83-2730. On the significance of a wall effect in enclosures with growing fires; June 1983 41 pages. In: NTIS.
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- Cooper, L. Y. NBSIR 83-2748.
Smoke movement in rooms of fire involvement and adjacent spaces; July 1983 38 pages. In: NTIS.
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Calculating fire plume characteristics in a two layer environment; September 1983 47 pages. In: NTIS.
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- Evans, D. D. NBSIR 83-2807.
Thermal actuation of extinguishing systems; March 1984 28 pages. In: NTIS.
Note: PB84-177164.
- Gonberg, A. and Hall, Jr., J. R. NBSIR 83-2677.
Analysis of electrical fire investigations in ten cities. Interim report.; March 1983 57 pages. In: NTIS.
Note: PB83-200113.

Hall, Jr., J. R., Bukowski, R. and Gomberg, A. NBSIR 83-2803.
Analysis of electrical fire investigations in ten cities.
Final report; December 1983 65 pages. In: NTIS.
Note: PB84-159789.

Hall, Jr., J. R. and Helzer, S. G. NBSIR 83-2754.
Civilian residential fire fatality rates: Six high-rate
versus six low-rate states; August 1983 35 pages. In: NTIS.
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Jason, N. H. NBSIR 83-2706.
Fire research publications, 1982; May 1983 18 pages. In:
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Jones, W. W. NBSIR 83-2684.
Review of compartment fire models; April 1983 41 pages. In:
NTIS.
Note: PB83-208173.

Kashiwagi, T., Ohlemiller, T. J. NBSIR 83-2689
Kashiwagi, T. and Jones, W. W. Thermal radiative ignition of
liquid fuels by a CO₂ laser; May 1983 84 pages. In: NTIS.
Note: PB83-261503.

Klote, J. H. and Bodart, X. NBSIR 83-2737.
Computer analysis of a pressurized stairwell; August 1983 34
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Note: PB83-261503.

Klote, J. H. and Fothergill, Jr., J. W. NBS Handbook 141.
Design of smoke control systems for buildings; July 1983 272
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Note: SD Catalog No.

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Smoke control for elevators; June 1983 60 pages. In: NTIS.
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Levin, B. C., Paabo, M., Fultz, M. L., NBSIR 83-2791
Bailey, C., Yin, W. and Harris, S. E. Acute inhalation
toxicological evaluation of combustion products from fire
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and polyester; November 1983 70 pages. In: NTIS.
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- Levin, B. C., Paabo, M. and Birky, M. M. NBSIR 83-2678.
Interlaboratory evaluation of the 1980 version of the
National Bureau of Standards test method for assessing the
acute inhalation toxicity of combustion products; April 1983
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- Nelson, H. E., Levin, B. M., Shibe, A. J. NBSIR 83-2659,
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- Steckler, K. D. NBSIR 83-2765.
Calculations of wall fire spread in an enclosure; November
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Fire induced flows through room openings--flow coefficients;
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Model of multiroom fire spread; August 1983 177 pages. In:
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Development of a calorimeter for simultaneously measuring
heat release and mass loss rates; June 1983 34 pages. In:
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III. Contract and Grant Reports

- Alvord, D. M. NBS-GCR-83-453.
Escape and Rescue Model: A simulation model for the emergency evacuation of board and care homes; December 1983 151 pages. Available from: NTIS.
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- Alvord, D. M. NBS-GCR-83-432.
Status report of Escape and Rescue model; June 1983 39 pages. Available from: NTIS.
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- Brauman, S. K., Matzinger, D. P. and Berg, R. A. NBS-GCR-83-428.
Polymer degradation during combustion; April 1983 38 pages. Available from: NTIS.
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- Bryan, J. L. NBS-GCR-83-425.
Implications for codes and behavior models from the analysis of behavior response patterns in fire situations as selected from the Project People and Project People II study programs; March 1983 216 pages. Available from: NTIS.
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- Bush, K. E., Bradley, H. L. NBS-GCR-83-427
and Hicks, Jr., H. D. Users guide for the application of Table 1--Safety parameter values for the Fire Safety Evaluation System for National Park Service facilities; May 1983 96 pages. Available from: NTIS.
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- Emmons, H. W. and Mitler, H. E. NBS-GCR-83-431.
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- Gahm, J. B. NBS-GCR-83-451.
Computer Fire Code VI; Vol. 1; December 1983 116 pages.
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- Gahm, J. B. NBS-GCR-83-451.
Computer Fire Code VI; Vol. 2; December 1983 148 pages.
NTIS.
Note: PB84-155795.

Harkleroad, M., Quintiere, J. and Walton, W. DOT/FAA/CT-83/28. Radiative ignition and opposed flow flame spread measurements on materials. US Department of Transportation, Federal Aviation Administration, Atlantic City, NJ; August 1983 96 pages. Available from: NTIS.
Note: PB83-.

Jeng, S-M., Chen, L. D., Faeth, G. M. NBS-GCR-83-422. Investigation of axisymmetric buoyant turbulent diffusion flames: Turbulence properties and concentrations of major species; February 1983 73 pages. Available from: NTIS.
Note: PB83-175612.

Kain, H. J. NBS-GCR-83-435. Detection times to fire-related stimuli by sleeping subjects; June 1983 97 pages. Available from: NTIS.
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Kanury, A. M. NBS-GCR-83-448. Scaling correlations of flashover experiments; October 1983 79 pages. Available from: NTIS.
Note: PB84-121581.

Krasny, J. F., Allen, P. J. and Maldonaldo, A. Tech. Rep. 146. Burn injury potential of Navy shipboard work clothing. Natick, MA: Navy Clothing and Textile Research Facility; February 1983.

Nober, E. H., Peirce, H., Wells, A. NBS-GCR-83-439. Waking effectiveness of household smoke and fire detection devices; July 1983 92 pages. Available from: NTIS.
Note: PB83-256511.

Pearson, R. G. and Joost, M. G. NBS-GCR-83-429. Egress behavior response times of handicapped and elderly subjects to simulated residential fire situations; May 1983 48 pages. Available from: NTIS.
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Pitz, W. J. NBS-GCR-83-436. Structures, inhibition and extinction of polymer diffusion flames; July 1983 123 pages. Available from: NTIS.
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Sargent, W. A. NBS-GCR-83-447. Natural convection flows associated heat transfer processes in room fires. Thesis in partial fulfillment of the requirements for the Degree of Doctor of Philosophy; October 1983. 525 pages. Available from: NTIS.
Note: PB84-171172.

Springer, G. S. and Do, M. H. NBS-GCR-83-433. Degradation of mechanical properties of wood during fire; October 1983 130 pages. Available from: NTIS.
Note: PB84-122274.

- Tan, Seng-Chuan. NBS-GCR-83-445.
Transient horizontal flame spread tests on cellular
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- Tan, Seng-Chuan. NBS-GCR-83-446.
Transient horizontal flame spread tests on cellular
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Note: PB84-142272.
- Tan, Seng-Chuan. NBS-GCR-83-446.
Transient horizontal flame spread tests on cellular
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